(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 15 January 2004 (15.01.2004)

PCT

(10) International Publication Number WO 2004/004520 A1

(51) International Patent Classification7: 23/06

(21) International Application Number:

A47G 19/06,

(74) Agent: MASCIOLI, Alessandro; Via Leonina, 26, I-00184 Roma (IT).

PCT/IT2002/000441

(81) Designated States (national): AU, CA, CN, JP, RU, US. (84) Designated States (regional): European patent (AT, BE,

BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT,

(22) International Filing Date:

4 July 2002 (04.07.2002)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicants and

(72) Inventors: CONGIU, Ignazio [IT/IT]; Via Busto Arsizio, 2, I-00040 Pomezia Roma (IT). LANUCARA, Maurizio [IT/IT]; Via Catalani, 4, I-00199 Roma (IT).

Declaration under Rule 4.17:

of inventorship (Rule 4.17(iv)) for US only

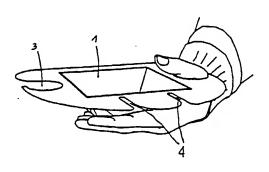
LU, MC, NL, PT, SE, SK, TR).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: A FOOD TRAY WITH THUMB HOLES



(57) Abstract: A bearing device that may be grasped for eating and/or drinking even while standing and moving, comprising grooves (1) realized in the structure for arranging the food thereon, as well as one or more passing through shapes (3) performed in the edge thereof for the manual bearing, and housings for the insertion and holding - with a rest and/or with a joint - of tins or bottles for drinks and/or one or more bearings (4) for cutlery and/or paper serviettes.

WO 2004/004520

10

15

20

PCT/IT2002/000441

A FOOD TRAY WITH THUMB HOLES

The present invention concerns a bearing device that may be grasped for eating and/or drinking even while standing and moving.

At present it occurs that, if not comfortably sitting around a table, eating and drinking takes place in a rather uncomfortable and little functional manner. In fact, while standing you can either eat or drink. For eating, you can hold your plate with one hand and with the other one you can use fork or spoon, and if you are eating on a plastic plate it is even more uncomfortable; for drinking, you will leave your plate and your fork or spoon. Most of all, while you are eating you must control your glass because, with many people around, someone else could take it by mistake. As this is not always possible, usually a much greater number of glasses is used than necessary.

It is the aim of the present invention to completely solve all above mentioned inconveniences.

The aim set forth is reached by means of the bearing device according to the present invention that may be grasped for eating and/or drinking even while standing and moving which, in a first variant, is of the throwaway kind out of paper, cardboard or other recycling material, for users of fast-foods and similar, for parties and/or anniversaries in which the colour and the design may recall New Year's Day, Carnival, Easter, birthdays etc.

10 A second variant of the bearing according to the present invention may be used several times as it is realized out of metal, plastic, wood or other materials; the convenience of this variant with respect to the throwaway one makes it particularly suitable for being used during holidays as a bearing for plastic plates and glasses; at the same time, it will also serve as a ballast when having a lunch in the open air.

For reaching the aim set forth in both variants, the bearing according to the present invention comprises a plurality of cavities obtained in the structure for placing the food, as well as one or more passing through shapes performed in the edge thereof for the manual bearing and also housings for inserting and keeping - with a rest and/or with a joint - tins or bottles for drinks. All variants may be realized in many dimensions and shapes according to the needs, as they may

bear one or more containers for food and/or drinks and one or more bearings for cutlery and paper serviettes.

The special and double grasping - left and right, closed or open - allows a safe and comfortable hold for anyone.

In a further variant, the mentioned throwaway bearing according to the present invention may be realized in a modular packing, with a minimum transport and storing encumbrance.

The present invention will be described more in detail herein below relating to the enclosed drawings in which some embodiments are shown which, according to the material used, may be of the throwaway kind or not.

Figure 1 shows an axonometric view of a device for taking food with the sole left hand that may be used, e.g., in the field of pastry.

20

10

15

Figure 2 shows the means for bearing the paper serviette.

Figure 3 shows the groove in the cardboard variant.

25 Figure 4 shows a plan.

Figures 5, 6, 7, 8, 9 show a possible realization out of cardboard or similar for taking complete meals using a throwaway plate, glass and cutlery, wherein in detail:

- 5 figure 5 shows a grasping with the left hand;
 - figure 6 shows the view of a possible preparation for a meal;
 - figure 7 shows a realization scheme;
 - figure 8 shows a view of a possible preparation for a meal;
- 10 figure 9 shows a plan view of the device.

Figures 10, 11, 12, 13, 14 show a possible realization for taking complete meals without a plate but with throwaway cutlery and glass, wherein in detail:

- 15 figure 10 shows a left-hand grasping;
 - figure 11 shows a view of a possible preparation for a meal;
 - figure 12 shows a scheme of a possible realization;
 - figure 13 shows a variant of a preparation for a meal;
- 20 figure 14 shows a plan view of the device.

Figures 15, 16, 17, 18, 19 show a possible realization for fast-foods, wherein in detail:

- figure 15 shows a left-hand grasping;

- figure 16 shows the view of a possible preparation with bearings for food and drinks typical for fast-foods ad similar;
- figure 17 shows a realization scheme;
- figure 18 shows a preparation variant for fast-foods and similar;
 - figure 19 shows a plan view of the device.

Figures 20, 21, 22, 23 show a possible realization out of metal, plastic or wood, that can be used again, for taking complete meals, wherein in detail:

- figure 20 shows a left-hand grasping;
- figure 21 shows a view of a possible preparation for a meal;
- 15 figure 22 shows another view of this variant;
 - figure 23 shows a plan view of the device.

Figures 24, 25, 26, 27 show a possible realization of a metal thread shaped for being re-used for taking complete meals, wherein in detail:

- figure 24 shows a view of a possible preparation for a meal:
- figure 25 shows a left-hand grasping;
- figure 26 shows another view of this variant;
- 25 figure 27 shows a plan view of the device.

Figures 28, 29 and 30 show the plan development of the modular variants: according to the present invention, small, medium and large, that may be realized out of cardboard or similar, with a watertight bottom.

Figures 31, 32, 33 and 34 show the development of a possible bottomless realization out of cardboard or similar, wherein in detail:

- 10 figure 31 shows a plan view of a small device;
 - figure 32 shows a plan view of a great device;
 - figure 33 shows a plan view of a device for housing cups of different dimensions;
- figure 34 shows a plan view of a device for taking fastfood meals.

Figures 35, 36, 37 and 38 show a plurality of devices with a bottom after assembling, wherein in detail:

- figures 35 and 37 show a great device;
- 20 figure 36 shows a small device;
 - figure 38 shows a medium device.

Figures 39, 40, 41, 42 show some bottomless devices after assembling, wherein in detail:

25 - figure 39 shows a small device;

- figure 40 shows a device for the cups;
- figure 41 shows a fast-food device with the typical accessories;
- figure 42 shows a fast-food device without accessories.

Relating now to the details shown in the enclosed figures, the bearing device according to the present invention, that may be grasped for eating and/or drinking even while standing and moving, comprises, in above mentioned variants and apart from already available objects shown only for understanding the usefulness of the present invention:

- a groove 1, for housing the food to be taken;
- a seat 2 for the thumb of the left hand for grasping, or for other functional objects;
- a seat 3 for the thumb of the right hand for grasping, or for other functional objects;
 - a seat 4 for the paper serviette or other functional objects;
 - a groove 5 to be glued to fixed to wings 6 in the cardboard realization;
- a plurality of wings 6 onto which said groove 5 may be glued or fixed;
 - a paper serviette 7 or similar;
 - a cardboard wing 8 or similar to be fixed to eyelets 15 for bearing drink containers 10 to 19, shown in the figures in

closed position, and fit for piling up and packing the device according to the present invention;

- a fork 9 or other cutlery;
- a tin 10 for drinks;
- 5 a throwaway glass 11 or similar;
 - a throwaway plate 12 or similar;
 - a seat 13 for a glass 11 or other functional objects;
 - a wing 14 for holding the paper serviette 7 or a cutlery 9
 or other functional objects;
- 10 a plurality of eyelets for fixing said wing 8;
 - a seat 16 for drink containers 10, 9 and 22;
 - a seat 17 for said plate 12;
 - a wing 18 in open position, holding a drink container;
 - a bottle 19 for drinks;
- a groove 20 to be glued or fixed to said wings 6, in the cardboard realization or similar;
 - a groove 21 onto which the meal is placed;
 - a glass 22 for drinks taken in a fast-food;
- a container 23 for food like the fried potatoes of a fast-20 food;
 - a container 24 for food like the hamburgers of a fast-food;
 - a seat 25 for containing food 23 or similar;
 - a seat 26 for containing food 24 or similar;
 - a seat 27 with a fixed tongue for drink containers 10 to 19;
- 25 a seat 28 for other functional objects;

- a groove 29, seat of said plate 12 or directly of the food;
- a cup 30;
- a groove 31 for said plate 12.
- 5 Furthermore, for what concerns the variants of the modular kind, the following references shall be mentioned:
 - a tongue 32 to be folded inside a hole 33 by pushing on a line 56 during assembling, whereby the relative edges are overlapping;
- a hole 33 into which said tongue is folded during assembling, a seat 34 for the thumb hold close as for grasping, a bottom 35 folded along the dotted lines during assembling and that becomes watertight;
- an eyelet 36 through which a wing 38 passes during assembling, before it gets folded into a hole 37;
 - a hole 37 into which, during assembling, a wing 38 gets folded;
 - a wing 38 passing through said eyelet 36 and then being folded into said hole 37;
- a plane part 39 that, during assembling, is to be folded first of 90° downwards along a line 51 and then of further 90° along a line 52, and thus becomes the bottom of what is contained in holes 13 and 27 after assembling;
 - a wing 40 with a smaller wing 38 at its end;

- an outer edge 41 that is to be folded downwards of 90°,
 for stiffening the device;
- an outer edge 42 that is to be folded downwards of 90° for stiffening the device, and containing holes 43 into which tongues 44 are folded during assembling;
- a hole 43 into which said tongues 44 are folded during assembling;
- a tongue 44 that must be folded into said hole 43 during assembling;
- an inner edge 45 that is to be folded downwards of 90°
 during assembling for stiffening the device;
- a plane part 46, cut out along the continuous line, that is to be folded downwards first of 90° along a line 53 and then of further 90° along a line 54 and finally a last fold of 90° of the part with the tongues 44 along a line 55, keeping said edge 42 inside, so that tongues 44 overlap in holes 43, and thus it becomes a bearing for the content of holes 13 and 27;
 - a hole 47 that may be used for cutlery or other accessories;
- a hole 48 for containing a dessert or other accessories;
 - a plane part 49, cut out along the continuous line, that must be folded downwards first of 90° along line 53, then of further 90° along line 54 and then the part with tongues 44 still of 90° along line 55, keeping the edge 42 inside so

that tongue 44 overlaps in said hole 43 and therefore is a bearing to the content of said holes 13 and 27;

- a plane part 50, cut out along a continuous line, that is to be folded downwards first of 90° along a line 53, then of further 90° along a line 54 and finally the part with the tongues 44 of further 90° along a line 55, keeping inside said edge 42 to that said tongue 44 overlaps in said hole 43 and is a bearing for the content of hole 48;
- a folding line 51;
- 10 a wing 52 for holding the plate;
 - a folding line 53;
 - a folding line 54;
 - a folding line 55;
 - a folding line 56;
- 15 a hollow space 57 for housing a plate;
 - a hollow space 58 for housing one or more small cups;
 - a hollow space 59 for housing one or more medium and great cups.

20

10

CLAIMS

- 1. A bearing device that may be grasped for eating and/or drinking even while standing and moving, characterized in a plurality of cavities obtained in the structure for placing the food, as well as one or more passing through shapes performed in the edge thereof for the manual bearing, and also housings for inserting and keeping with a rest and/or with a joint tins or bottles for drinks and/or one or more bearings for cutlery and paper serviettes.
 - 2. A bearing device that may be grasped according to claim 1, characterized in:
 - a groove (1), for housing the food to be taken;
- a seat (2) for the thumb of the left hand for grasping, or
 for other functional objects;
 - a seat (3) for the thumb of the right hand for grasping, or for other functional objects;
- a seat (4) for a paper serviette (7) or other functional objects;
 - a groove (5) to be glued to fixed to wings (6) in the cardboard realization;
 - a plurality of wings (6) onto which said groove (5) may be glued or fixed;

WO 2004/004520 PCT/IT2002/000441

13

- a cardboard tongue (8) or similar to be fixed to eyelets (15) for bearing drink containers (10) and (19);
- a seat (13) for a glass (11) or other functional objects;
- a wing (14) for holding the paper serviette (7) or a cutlery (9) or other functional objects;
- a plurality of eyelets (15) for fixing the tongue (8);
- a seat (16) for drink containers (10, 19 and 22);
- a seat (17) for a plate (12);
- a tongue (18) in open position, holding a drink container;
- a groove (20) to be glued or fixed to the wings (6), in the cardboard realization or similar;
 - a groove (21) onto which the meal is placed;
 - a seat (25) for containing food (23) or similar;
 - a seat (26) for containing food (24) or similar;
- a seat (27) with a fixed tongue for the drink containers (10) and (19);
 - a seat (28) for other functional objects;
 - a groove (29), seat of the plate (12) or directly of the food;
 - a groove (31) the plate (12).

20

25

- 3. A device according to claim 1, characterized in that it may be modular by means of:
- a tongue (32) to be folded inside a hole (33) by pushing on a line (56) during assembling, whereby the relative edges are overlapping;

- a hole (33) into which said tongue is folded during assembling;
- a seat (34) for the thumb hold close as for grasping;
- a bottom (35) folded along the dotted lines during assembling and that becomes watertight;
- an eyelet (36) through which a wing (38) passes during assembling, before it gets folded into a hole (37);
- a hole (37) into which, during assembling, a wing (38) gets folded;
- a wing (38) passing through said eyelet (36) and then being folded into said hole (37);
 - a plane part (39) that, during assembling, is to be folded first of 90° downwards along a line (51) and then of further 90° along a line (52), and thus becomes the bottom of what is contained in holes (13) and (27) after assembling;
 - a wing (40) with a smaller wing (38) at its end;
 - an outer edge (41) that is to be folded downwards of 90°, for stiffening the device;
- an outer edge (42) that is to be folded downwards of 90° for stiffening the device, and containing holes (43) into which tongues (44) are folded during assembling;
 - a hole (43) into which said tongues (44) are folded during assembling;

- a tongue (44) that must be folded into said hole (43) during assembling;

PCT/IT2002/000441

- an inner edge (45) that is to be folded downwards of 90°
 during assembling for stiffening the device;
- a plane part (46), cut out along the continuous line, that is to be folded downwards first of 90° along a line (53) and then of further 90° along a line (54) and finally a last fold of 90° of the part with the tongues (44) along a line (55), keeping said edge (42) inside, so that tongues (44) overlap in holes (43), and thus it becomes a bearing for the content of holes (13) and (27);
 - a hole (47) that may be used for cutlery or other accessories;
 - a hole (48) for containing a dessert or other accessories;
- a plane part (49), cut out along the continuous line, that must be folded downwards first of 90° along line 53, then of further 90° along line (54) and then the part with tongues (44) still of 90° along line (55), keeping the edge (42) inside so that tongue (44) overlaps in said hole (43) and therefore is a bearing to the content of said holes (13) and (27);
 - a plane part (50), cut out along a continuous line, that is to be folded downwards first of 90° along a line (53), then of further 90° along a line (54) and finally the part with the tongues (44) of further 90° along a line (55),

keeping inside said edge (42) to that said tongue (44) overlaps in said hole (43) and is a bearing for the content of hole (48);

- a folding line (51);
- 5 a wing (52) for holding the plate;
 - a folding line (53);
 - a folding line (54);
 - a folding line (55);
 - a folding line (56);
- a hollow space (57) for housing a plate;
 - a hollow space (58) for housing one or more small cups;
 - a hollow space (59) for housing one or more medium and great cups.
- 4. A bearing device that may be grasped according to claims 1 or 2, characterized in the presence of some of the described elements assembled in various ways according to the needs.
- 5. A bearing device that may be grasped according to claim 1, characterized in that it may be of the throwaway kind out of paper, cardboard or other recycling material.
- 6. A bearing device that may be grasped according to claim 1,characterized in that it is pre-shaped and ready for use.

WO 2004/004520 PCT/TT2002/000441

17

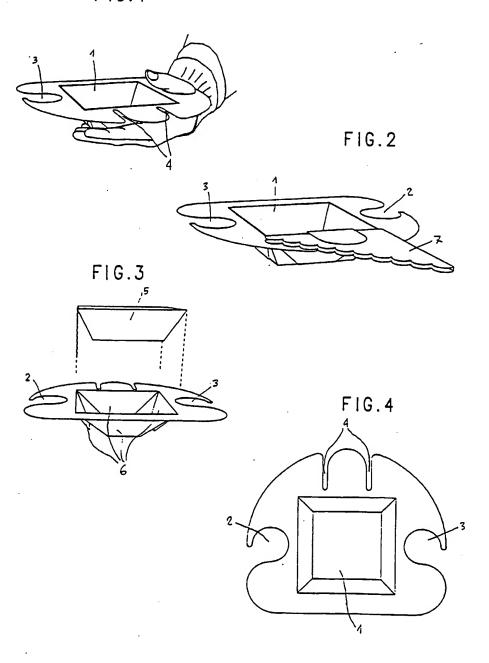
7. A bearing device that may be grasped according to claim 1, characterized in that it has a watertight bottom after the assembling by the final user.

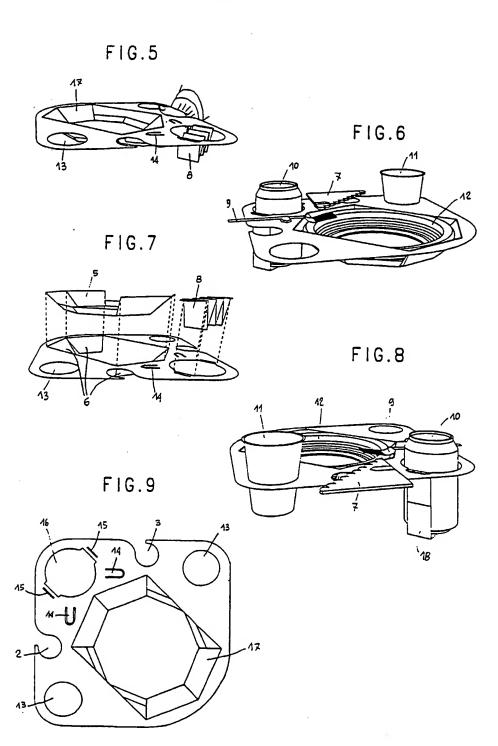
5

- 8. A bearing device that may be grasped according to claim 1, *characterized in that* it is bottomless after the assembling by the final user.
- 9. A bearing device that may be grasped according to claim 1, characterized in that it may be used again and therefore out of metal, plastic or wood or other similar materials.

15

FIG.1





PCT/IT2002/000441

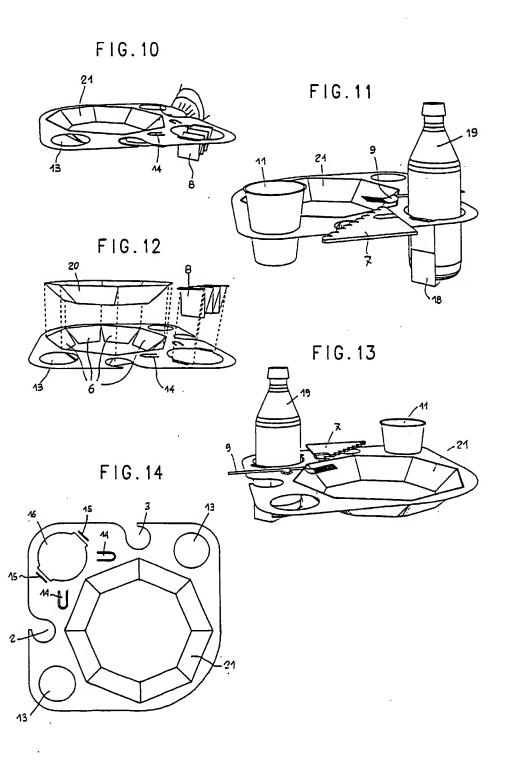


FIG. 15

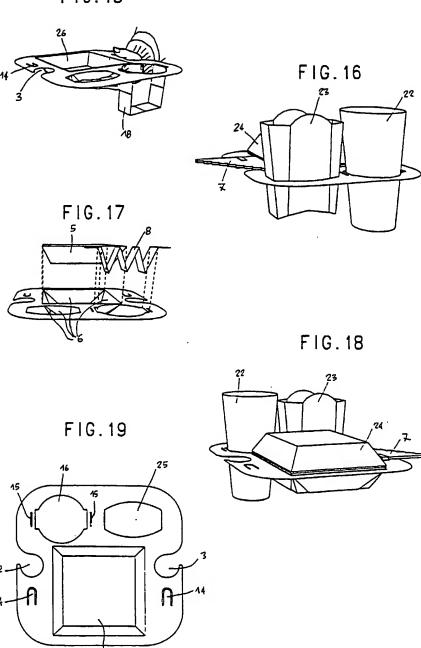
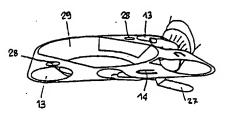


FIG.20



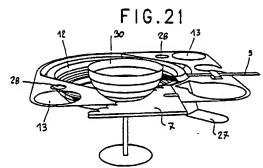
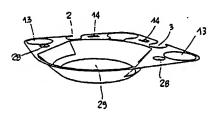
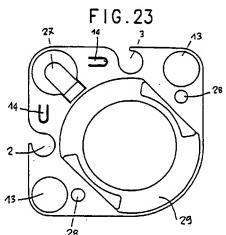


FIG. 22





PCT/IT2002/000441

FIG.24

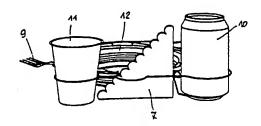
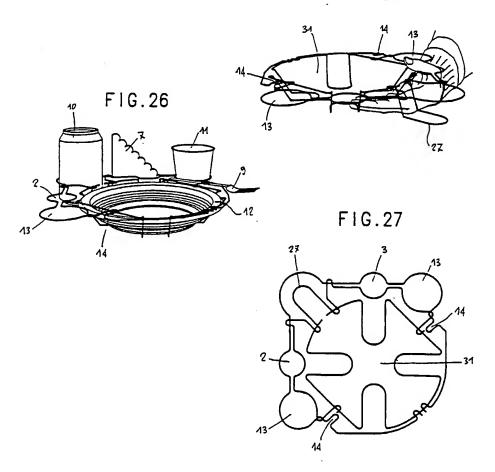
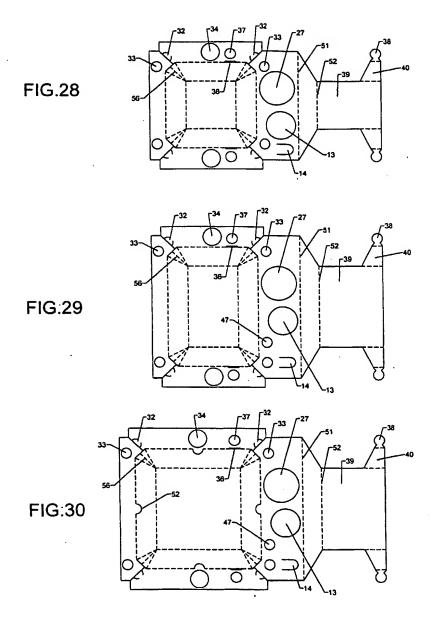
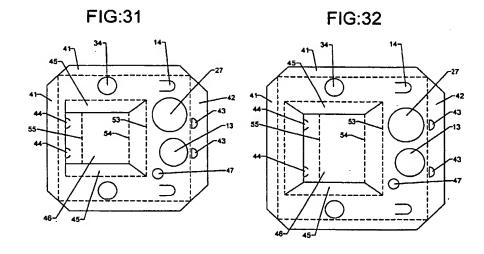
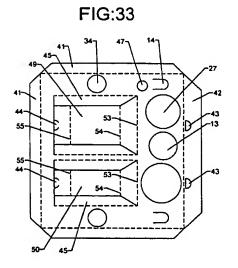


FIG.25









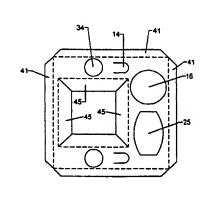
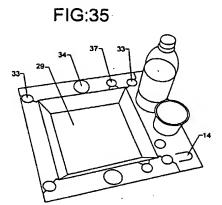
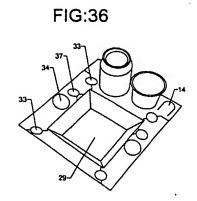
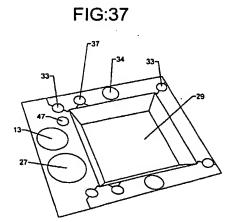
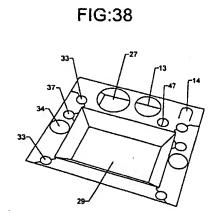


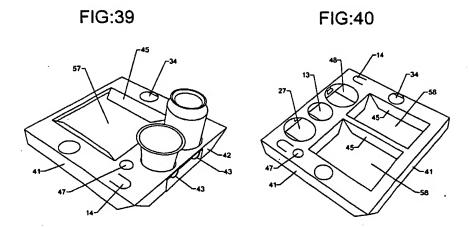
FIG:34











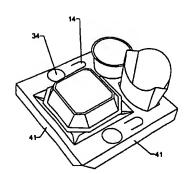


FIG:41

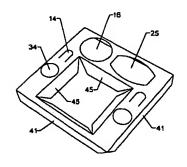


FIG:42

INTERNATIONAL SEARCH REPORT

Internation Application No PCT/II 02/00441

			FC1/11 UZ/UU441			
A. CLASSIF IPC 7	FICATION OF SUBJECT MATTER A47G19/06 A47G23/06					
According to	According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS	SEARCHED					
Minimum do IPC 7	Minimum documentation searched (dassification system followed by classification symbols)					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched						
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data						
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT					
Category •	Citation of document, with indication, where appropriate, of the rele	vant passages	Relevant to claim No.			
X	US 5 607 077 A (TORKELSON TORKEL 4 March 1997 (1997-03-04) column 4, line 19 -column 6, line	•	1,4-7,9			
х	DE 72 02 617 U (MUELLER P) 21 September 1972 (1972-09-21) the whole document		1,4-6,8,			
X	DE 70 40 940 U (MUELLER P) 1 July 1971 (1971-07-01) the whole document		1,4-7,9			
Х	GB 2 369 769 A (FARISH ANDREW) 12 June 2002 (2002-06-12) page 4, line 11 -page 6, line 29		1,4-7			
	-	/				
X Further documents are listed in the continuation of box C. X Palent family members are listed in annex.						
or priority date and not in conflict w			shed after the international filing date not in conflict with the application but the principle or theory underlying the			
E earlier document but published on or after the international "X" document of particular releva filing date "X" document of particular releva cannot be considered novel			ar relevance; the claimed invention ed novel or cannot be considered to e step when the document is taken alone			
which is cited to establish the publication date of another diation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "O" document is combined with one or more other such document is combined with one or more other such document is combined to being obvious to a person skilled						
P docume	ent published prior to the international filing date but	in the art.	of the same patent family			
Date of the actual completion of the International search Date of mailing of the international search report						
	O January 2003	03/02/2	003			
Name and	malling address of the ISA European Palent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk	Authorized officer				
	Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Reichha	rdt, O			

INTERNATIONAL SEARCH REPORT

Internation Application No
PCT/IT 02/00441

tegory *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	US 2 466 636 A (BRUCKNER MARTHA L ET AL) 5 April 1949 (1949-04-05) column 1, line 40 -column 2, line 46	1,4-7
	DE 19 75 348 U (FA. H. C. KŌNIG) 21 December 1967 (1967-12-21) figure 2	1,4,6,8,
	GB 2 367 233 A (RHM TECH LTD) 3 April 2002 (2002-04-03) page 3-11	1,4,6,7,
(GB 2 154 428 A (BELL TREVOR JOHN) 11 September 1985 (1985-09-11) page 1, 11ne 72-124	1,4-7,9
X	DE 86 29 874 U (DIEFENBACH B) 3 March 1988 (1988-03-03) figures 1,7	1,4,6,7,
X	US 5 152 398 A (FORESTAL ROBERT J ET AL) 6 October 1992 (1992-10-06) column 4, line 1 -column 6, line 29	1,4-8
X	US 6 129 235 A (CRESKE EDWARD J) 10 October 2000 (2000-10-10) figure 1	1,4-7,9
X	US 5 390 798 A (YANUZZI GERARD) 21 February 1995 (1995-02-21) column 2, line 36 -column 4, line 15	1,4-6,8,
X	US 4 219 144 A (HAGELBERG GABRIELLA) 26 August 1980 (1980-08-26) column 1, line 48 -column 2, line 53	1,4,6,7,
X	US 5 114 038 A (LAUMANN BETINA) 19 May 1992 (1992-05-19) column 3, line 19 -column 4, line 27	1,4-7,9
X	GB 2 272 829 A (POLYSTYRENE BOX LIMITED) 1 June 1994 (1994-06-01) figure 1	1,4,6,7
X	US 5 429 266 A (D'OLIVEIRA MANUEL ET AL) 4 July 1995 (1995-07-04) column 5, line 12 -column 6, line 31	1,4,6,7 9
X	US 5 301 871 A (GROSS DAVID F ET AL) 12 April 1994 (1994-04-12) column 2, line 50 -column 6, line 34	1,4-6

INTERNATIONAL SEARCH REPORT

PCT/IT 02/00441

				1	02/00441
Patent document cited in search report		Publication date	<u>-</u>	Patent family member(s)	Publication date
US 5607077	A	04-03-1997	AU WO	9120391 A 9220586 A1	30-12-1992 26-11-1992
DE 7202617	U	21-09-1972	NONE		
DE 7040940	U	01-07-1971	NONE		
GB 2369769	A	12-06-2002	NONE		
US 2466636	Α	05-04-1949	NONE		
DE 1975348	U		NONE		
GB 2367233	A	03-04-2002	AU WO	9015101 A 0226088 A1	08-04-2002 04-04-2002
GB 2154428	A	11-09-1985	NONE		
DE 8629874	U	03-03-1988	DE	8629874 U1	03-03-1988
US 5152398	Α	06-10-1992	WO AU	9407749 A1 2803492 A	14-04-1994 26-04-1994
US 6129235	Α	10-10-2000	NONE		
US 5390798	A	21-02-1995	US	5294000 A	15-03-1994
US 4219144	A	26-08-1980	NONE		
US 5114038	A	19-05-1992	DE AT DE DK EP ES GR	3916159 A1 93372 T 59002431 D1 398273 T3 0398273 A1 2046584 T3 93300117 T1	22-11-1990 15-09-1993 30-09-1993 04-10-1993 22-11-1990 01-02-1994 30-11-1993
GB 2272829	A	01-06-1994	NONE		
US 5429266	A	04-07-1995	NONE		
US 5301871	A	12-04-1994	NONE		



For receiving Office use only	
International Application No.	
International Filing Date	
Name of receiving Office and "PCT International	Application"
Applicant's or agent's file reference	

REQUEST The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty. (If desired) (12 characters maximum) PCT 2230 BOX NO. THE OF INVENTION A BEARING DEVICE THAT MAY BE GRASPED FOR EATING AND/OR DRINKING EVEN Box No. I WHILE STANDING AND MOVING This person is also inventor APPLICANT Box No. II Name and address: (Fumily name followed by given nume: for a legal entity, full official designation.
The address must include postal code and name of country. The country of the address indicated in this
Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) Telephone No. Pacsimile No. CONGIU Ignazio vla Busto Ārsizio 2 Teleprinter No. 00040 Pomezia Roma Italy Applicant's registration No. with the Office State (that is, country) of nationality: State (that is, country) of residence: ITALY the States indicated in the Supplemental Box the United States of America only all designated States except the United States of America This person is applicant all designated States for the purposes of: FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S) Name and address: (Family name fallowed by given name: for a legal entity, full afficial designation. The address must include postal ends and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if an State of residence is indicated below.) This person is: applicant only LANUCARA Maurizio [X] applicant and inventor via Catalani 4 inventor only (If this chuck-has is marked, do not fill in below.) 00199 Roma Italy Applicant's registration No. with the Office State (that ix. country) of residence: State (that is, country) of nationality: Italy Italy the States indicated in the Supplemental Box This person is applicant for the purposes of: ull designated States except the United States of America the United States of America only sil designated Further applicants and/or (further) inventors are indicated on a continuation sheet. AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE Box No. 1V The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: common representative ngent Name and address: (Funtly name followed by given name; for a legal entity, full afficial designation.
The address must include postal code and name of country.) Telephone No 064883232 MASCIOLI Alessandro Facsimile No. via Leonina 26 064883232 00184 Roma Teleprinter No. Italy Agent's registration No. with the Office

Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Form PCT/RO/101 (first sheet) (Merch 2001; reprint January 2002)

See Notes to the request form

	:
lo2	

		Sheet No2					
Hoz No. 1	V DESIGNATION OF STATES	Mark the applicable check-hoxes below; at least one must be marked.					
	wing designations are hereby made	nder Rule 4.9(a):					
Regiona	l Patent	The state of the s					
☐ AP	ARIPO Patent: GH Ghana, GF	Gambia, KE Kenya, LS Lescino, MW Malawi, MZ Mozembique, SD Sudan,					
	SL Sierra Leone, SZ Sweziland, TZ	United Republic of Tenzanta, U.C. Uganda. 214 Zambia. 244 Zimbia.					
	16 1 11 1						
	Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KC Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian						
	Prieme Convention and of the PCT						
EP EP	EP European Patenti AT Austria, BE Belgium, CH & L1 Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Groece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, TR Turkey, and any other State which is a Contracting State of						
	the European Patent Convention as	d of the PUT					
		J Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, oriol Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, oriol Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, oriol Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, oriol Guinea, GW Guinea, GW Guinea, GW GW Branda, Conventing Sunse of the PCT (Fother kind)					
		orial Guinea, GW Guinea-Biasad, ME total, Contracting State of the PCT (if other kind secify on dotted line)					
Nations	il Patent (if other kind of protection	or treatment desired, specify on dotted line):					
	United Arab Emirates	□ CM Combio □ NZ New Z@1400 · · · · · · · · · · · · · · · · · ·					
_		☐ HR Croatia ☐ OM Oman					
□ AT	Allmaria	☐ HU Hungary ☐ PH Philippines					
m		If Immel					
BE ATT	Australia	IN India					
. –	. 1 - 11	[[46 [Celand					
☐ BA	Bosnia and Horzegovina	IN IP leven					
	D. b. dos	I I KE Kanua					
□ BC	Bulgaria	☐ KC Kyrgyzsinn ☐ SE Sweden					
□ BR	Brazil	KP Democratic People's Republic Strange Singapore					
□ BZ	Bolizo	☐ KR Republic of Korea ☐ SK Slovakia					
CA	Canada	KZ Kazakhatan					
CII.	& LI Switzerland and Liechtenstein						
	China	TN Tunisia					
Co	Colombia	LS Lesotho					
☐ CR	Costa Rica	TT Trinidad and Tobago					
L CU	Cuba						
1 —	Czach Republic	TZ United Republic of Tanzania					
H DE	Germany	MA Morouro UA Ukraine					
		I I MT Describite of Moldova UV VENIUM					
I	Dominica Algeria	US United States of America					
1 — —		Mac Madagneon					
I II KC	Ecuador	I MV The former Vurgulary Republic of LI UZ UZDEKISIZH					
☐ ES	Spain	Manadonia William VN VICI Nam Control Control Control					
	Eluland						
	United Kingdom	☐ MN Mongolia ☐ YU Yugoslavis					
,							
GE	Grenada Georgia	☐ MZ Mozambique ☐ ZW ZImbabwe					
GI	Ghana	NO Norway					
Check-	baxes below reserved for designatin	States which have become party to the PCT after issuance of this sheet:					
		addition to the designations made above, the applicant also makes under Rule 4.9(b) all					
any designation which is not confirmed before the explanation (it is must reach the receiving Office within the 15-month time limit.) applicant at the expiration of that time limit. (Confirmation (including feet) must reach the receiving Office within the 15-month time limit.)							

Sheet No 3					
Box No. VI PRIORITY CLAIM					
The priority of the following earlier application(a) is hereby claimed:					
Filing date	Number	Where earlier application is:			
of earlier application (day/month/year)	of earlier application of earlier application		regional application: regional Office	international application: receiving Office	
item (1)			1		
item (2)					
item (3)			·		
item (4)			!		
item (5)					
	are indicated in the Suppleme				
The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application (a) (only If the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as: all items item (1) item (2) item (3) item (4) item (5) Supplemental Box *Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(11)):					
	TIONAL SEARCHING AU				
Choice of International Searching Authority (ISA) (if two or more international Searching Authorities are competent to carry out the international search, indicate the Authority chosen: the two-letter code may be used): ISA /					
Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year) Number Country (or regional Office)					
Box No. VIII DECLARATIONS					
The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable Number of check-boxes below and indicate in the right column the number of each type of declaration):					
Box No. VIII (i) Declaration as to the identity of the inventor					
Box No. VIII (ii)	Box No. VIII (ii) Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent :				
Box No. VIII (III)	Box No. VIII (III) Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application:				
Box No. VIΠ (iv)	Box No. VIII (iv) Declaration of inventorship (only for the purposes of the designation of the United States of America) : 1				
Box No. VIII (v) Declaration as to non-prejudicial disclosures or exceptions to lack of novelly :					

Form PCT/RO/101 (third sheet) (March 2001; reprint January 2002)

See Notes to the request form

TANCHAGE	Sheat No	Number
Total number of sheets (b) sequence listing part of description filed computer readable form (i) only (under Section 801(a)(i)) (ii) in addition to being filed in papform (under Section 801(a)(ii)) Type and number of carriers (diskene CD-ROM, CD-R or other) on which the sequence listing part is contained (additionally to be indicated under item 9(ii), in the sequence is the indicated under item 9(ii), in the sequence is the indicated under item 9(ii), in the sequence is the indicated under item 9(ii), in the sequence is the indicated under item 9(iii).	This international application is accompanied by the following them(s) (mark the applicable check-baxes below and indicate in right column the number of each item): 1. fee calculation sheet 2. original separate power of attorney 3. original general power of attorney 4. original general power of attorney; reference number. if any 5. statement explaining lack of signature 6. priority document(s) identified in Box No. VI us item(s): 7. translation of international application into (language): 8. separate indications concerning deposited microorganism or other biological material 9. sequence listing in computer readable form (indicate also by and number of carriors (diskette, CD-ROM, CD-R or other) under Rule 13/er only (and not as part of the international application) (ii) (anly where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er (iii) (only where check-box (b)(i) or (b)(ii) is marked in Rule 13/er	es : : : : : : : : : : : : :
Alessandro MASCIOL		Desivings:
	For receiving Office use only	2. Drawings:
1. Date of actual receipt of the purpointernational application:		received:
	gs completing	not receive
Corrected date of actual receipt d timely received papers or drawing the purported international applications. Subsection Subsectio	wired	4
3. Corrected date of actual receipt d timely received papers or drawing the purposed international applications. 4. Date of timely receipt of the requestrections under PCT Article 1.	1(2): Control of Search copy delayed until search fee is paid	
Corrected date of actual receipt d timely received papers or drawing the purported international applications. Subsection Subsectio	1(2): Control of Search copy delayed until search fee is paid	

Shact No. . . 4 . . .

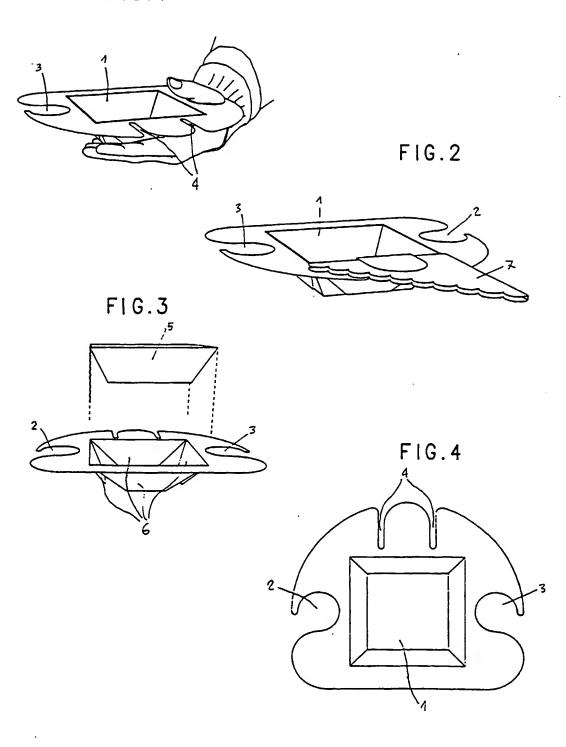
Box No. VIII (Iv) DECLARATION: INVENTORSHIP (only for the purposes of the designation of the United States of America) The declaration must conform to the following standardized wording provided for in Section 214; see Notes to Boses Nos. VIII, VIII (1) to (v) (in general) and the specific Notes to Box No. VIII (iv). If this Box is not used, this sheet should not be included in the request.

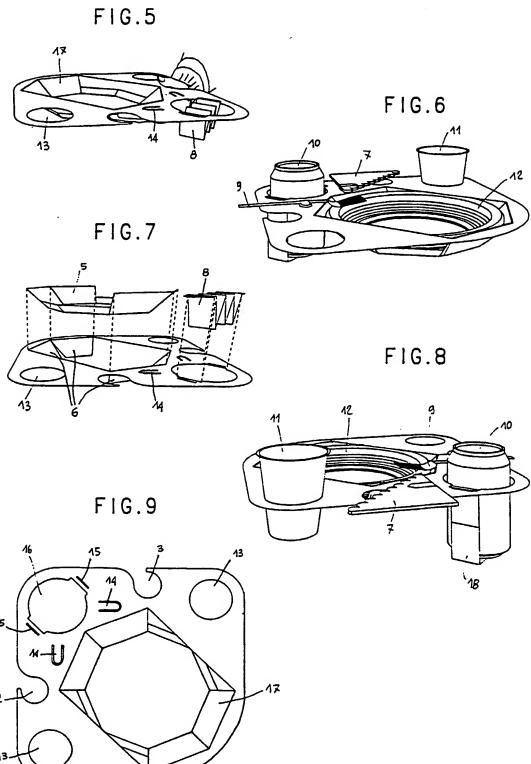
Declaration of inventorship (Rules 4.17(iv) and 51bis.1(a)(iv))

for the purposes of the designation of	the United States of America:			
I hereby declare that I believe I am the original, first and sole (if only o is listed below) inventor of the subject matter which is claimed and fo	A MUCH a batent is souther			
This declaration is directed to the international application of which it forms a part (if filing declaration with application).				
This declaration is directed to international application No. PCT/				
I hereby declare that my residence, mailing address, and citizenship a	re as stated next to my name.			
I hereby state that I have reviewed and understand the contents of the a of said application. I have identified in the request of said application, it and I have identified below, under the heading "Prior Applications," is Organization, day, month and year of filing, any application for a potent States of America, including any PCT international application designal having a filing date before that of the application on which foreign prior to the state of the state of the special can which the state of the	y application number. country or Member of the World Trade or inventor's certificate filed in a country other than the United ting at least one country other than the United States of America, its claiment.			
Prior Applications:				
I hereby acknowledge the duty to disclose information that is kn 37 C.P.R. § 1.56, including for continuation-in-part applications, mater of the prior application and the PCT international filing date of the co	entinuation-in-part application.			
I hereby declare that all statements made herein of my own knowledge are believed to be true; and further that these statements were made wanted are punishable by fine or imprisonment, or both, under Section false statements may jeopardize the validity of the application or any	rare true and that all statements made on information and belief with the knowledge that willful fulse statements and the like so look of Title 18 of the United States Code and that such willful patent issued thereon.			
Name: CONGIU Ignazio				
Residence: Pomezia (Rome) - Italy (city and either US state, if applicable, or country)				
Mailing Address: via Busto Arsizio 2 - 00040 Pomezia (Roma) - Italy				
Giriannia Italian				
Inventor's Signature CAST CPARTS. (If not contained in the request or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	Date: 18 June 2002 (of signature which is not contained in the request, or of the declaration that is corrected or added under Rule 26ter after the filing of the international application)			
nie allania				
Name:	***************************************			
Residence: Rome - Italy	***************************************			
Mailing Address: via Alfrado Catalani 4 - 00199 Roma - Ita	<u> </u>			
Citizenship: Italian Inventor's Signature: Management in corrected or	n 18 June 2002			
Inventor's Signature: (If not contained in the request, or if declaration is corrected or added under Rule 26ter after the filing of the international application. The signature must be that of the inventor, not that of the agent)	(of signature which is not contained in the request. or of the declaration that is corrected or added under Rule 26/er after the filing of the international application)			
	tion of Box No. VIII (iv)			
This declaration is continued on the following sheet, "Continue	Sag Notice to the request first			

Form PCT/RO/101 (declaration sheet (iv)) (March 2001; reprint January 2002)

FIG.1





(,

3/10

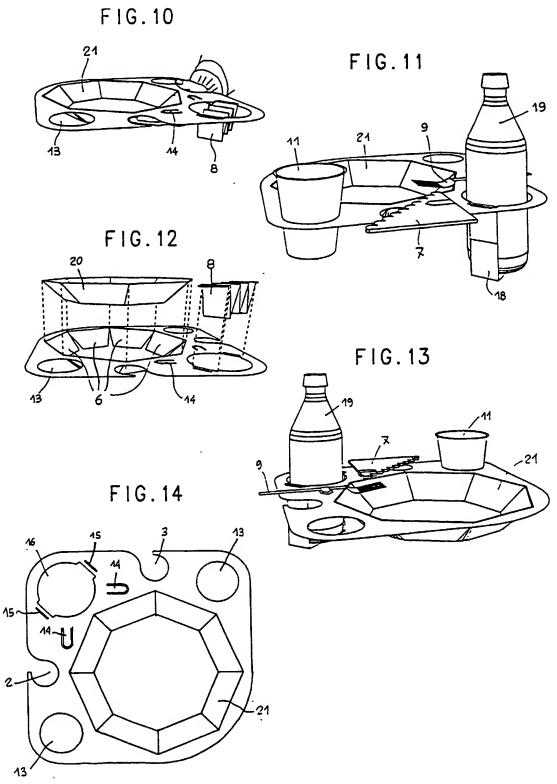
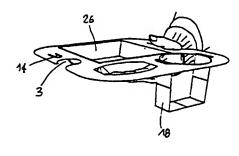


FIG. 15



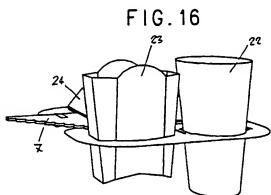
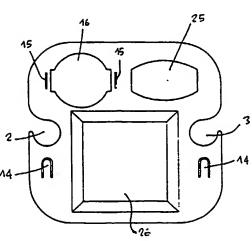
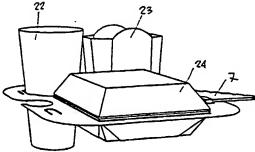


FIG. 17

FIG.18

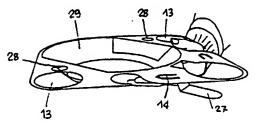






5/10

F1G.20



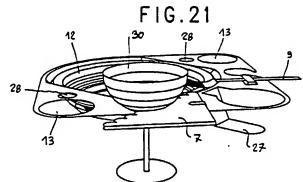
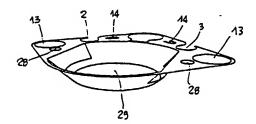
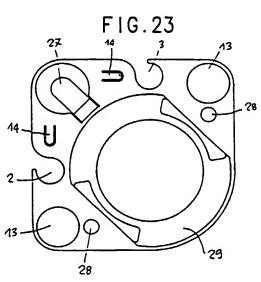


FIG.22





6/10

FIG.24

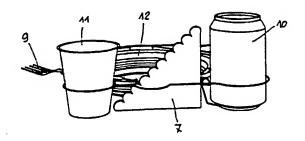
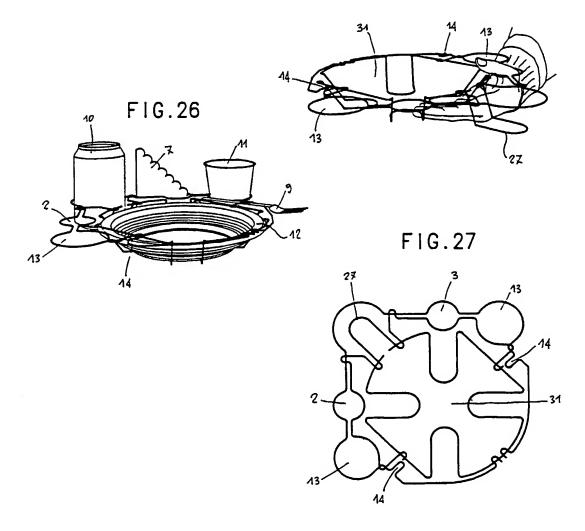
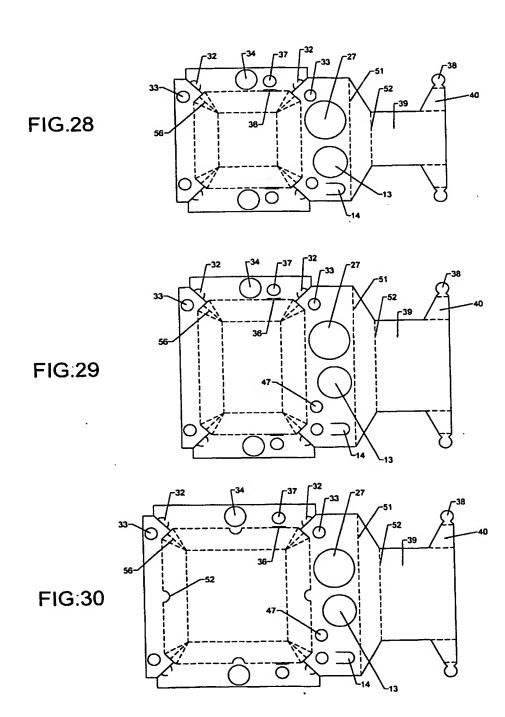
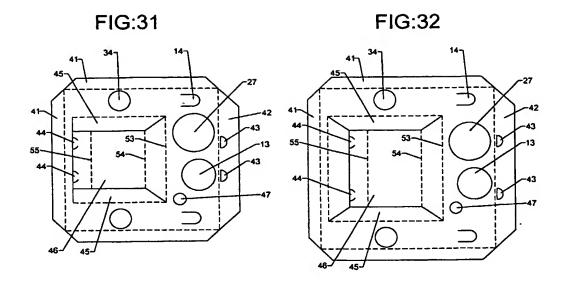
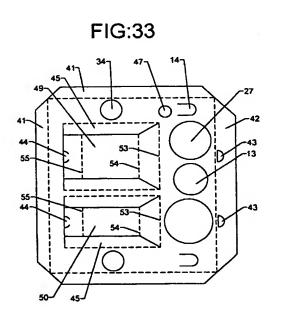


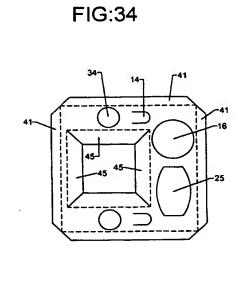
FIG. 25













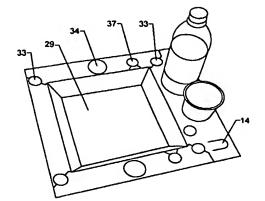


FIG:36

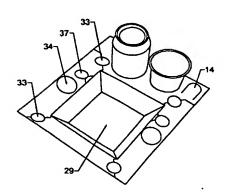


FIG:37

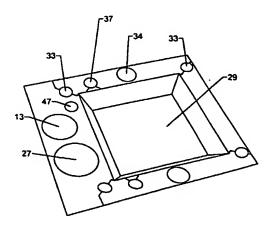


FIG:38

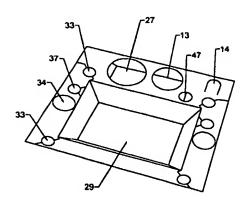


FIG:39

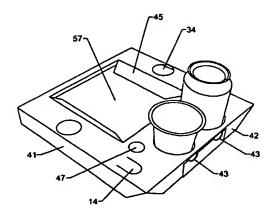


FIG:40

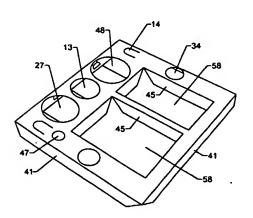


FIG:41

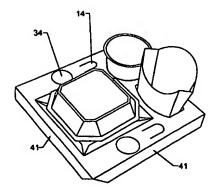
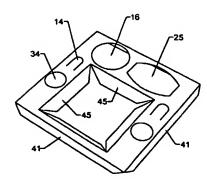


FIG:42



A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47G19/06 A47G23/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

)

 $\begin{array}{ll} \mbox{Minimum documentation searched (dassification system tollowed by classification symbols)} \\ \mbox{IPC 7} & \mbox{A47G} \end{array}$

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	US 5 607 077 A (TORKELSON TORKEL E) 4 March 1997 (1997-03-04) column 4, line 19 -column 6, line 34	1,4-7,9	
X	DE 72 02 617 U (MUELLER P) 21 September 1972 (1972-09-21) the whole document	1,4-6,8, 9	
X	DE 70 40 940 U (MUELLER P) 1 July 1971 (1971-07-01) the whole document	1,4-7,9	
X	GB 2 369 769 A (FARISH ANDREW) 12 June 2002 (2002-06-12) page 4, line 11 -page 6, line 29	1,4-7	
	-/		

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.		
Special categories of cited documents: 'A' document defining the general state of the art which is not considered to be of particular relevance 'E' earlier document but published on or after the international filling date 'L' document which may throw doubts on priority ctaim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) 'O' document referring to an oral disclosure, use, exhibition or other means 'P' document published prior to the international filling date but later than the priority date ctaimed	 "T" tater document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention. "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone. "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family 		
Date of the actual completion of the international search	Date of mailing of the international search report		
20 January 2003	03/02/2003		
Name and mailing address of the ISA	Authorized officer		
European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Reichhardt, O		



CICATH	ation) DOCUMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 2 466 636 A (BRUCKNER MARTHA L ET AL) 5 April 1949 (1949-04-05) column 1, line 40 -column 2, line 46	1,4-7		
X	DE 19 75 348 U (FA. H. C. KÖNIG) 21 December 1967 (1967-12-21) figure 2	1,4,6,8,		
X	GB 2 367 233 A (RHM TECH LTD) 3 April 2002 (2002-04-03) page 3-11	1,4,6,7,		
X	GB 2 154 428 A (BELL TREVOR JOHN) 11 September 1985 (1985-09-11) page 1, line 72-124	1,4-7,9		
X	DE 86 29 874 U (DIEFENBACH B) 3 March 1988 (1988-03-03) figures 1,7	1,4,6,7,		
X	US 5 152 398 A (FORESTAL ROBERT J ET AL) 6 October 1992 (1992-10-06) column 4, line 1 -column 6, line 29	1,4-8		
X	US 6 129 235 A (CRESKE EDWARD J) 10 October 2000 (2000-10-10) figure 1	1,4-7,9		
X	US 5 390 798 A (YANUZZI GERARD) 21 February 1995 (1995-02-21) column 2, line 36 -column 4, line 15	1,4-6,8,		
X	US 4 219 144 A (HAGELBERG GABRIELLA) 26 August 1980 (1980-08-26) column 1, line 48 -column 2, line 53	1,4,6,7,		
X	US 5 114 038 A (LAUMANN BETINA) 19 May 1992 (1992-05-19) column 3, line 19 -column 4, line 27	1,4-7,9		
X	GB 2 272 829 A (POLYSTYRENE BOX LIMITED) 1 June 1994 (1994-06-01) figure 1	1,4,6,7,		
x	US 5 429 266 A (D'OLIVEIRA MANUEL ET AL) 4 July 1995 (1995-07-04) column 5, line 12 -column 6, line 31	1,4,6,7,		
x	US 5 301 871 A (GROSS DAVID F ET AL) 12 April 1994 (1994-04-12) column 2, line 50 -column 6, line 34	1,4-6		



Internation Section No PCT/IT 02/00441

Patent document dited in search report		Publication date		Patent family member(s)	Publication date
US 5607077	Α	04-03-1997	AU WO	9120391 A 9220586 A1	30-12-1992 26-11-1992
DE 7202617	U	21-09-1972	NONE		
DE 7040940	U	01-07-1971	NONE		
GB 2369769	Α	12-06-2002	NONE		
US 2466636	Α	05-04-1949	NONE		
DE 1975348	U		NONE		
GB 2367233	A	03-04-2002	AU WO	9015101 A 0226088 A1	08-04-2002 04-04-2002
GB 2154428	A	11-09-1985	NONE		
DE 8629874	U	03-03-1988	DE	8629874 U1	03-03-1988
US 5152398	A	06-10-1992	WO AU	9407749 A1 2803492 A	14-04-1994 26-04-1994
US 6129235	Α	10-10-2000	NONE		
US 5390798	A	21-02-1995	US	5294000 A	15-03-1994
US 4219144	A	26-08-1980	NONE		
US 5114038	A	19-05-1992	DE AT DE DK EP ES GR	3916159 A1 93372 T 59002431 D1 398273 T3 0398273 A1 2046584 T3 93300117 T1	22-11-1990 15-09-1993 30-09-1993 04-10-1993 22-11-1990 01-02-1994 30-11-1993
GB 2272829	A	01-06-1994	NONE		
US 5429266	A	04-07-1995	NONE		
US 5301871	Α	12-04-1994	NONE		